

WHAT IS CLAIMED IS:

1. A semiconductor laser comprising:

a substrate;

a clad layer of a first conduction type formed on the substrate;

an active layer formed on the clad layer of the first conduction type and having a multiple well structure alternately stacking well layers of an InGaAlP compound semiconductor and barrier layers of an InGaAlP compound semiconductor to emit light from an emission region thereof toward opposed first and second edges by current injection;

a clad layer of a second conduction type formed on the active layer;

a first window region formed near the first edge, in which the bandgap of the well layers is wider than the bandgap of the well layers in the emission region; and

a second window region formed near the second edge, in which the bandgap of the well layers is wider than the bandgap of the well layers in the emission region and narrower than the bandgap of the well layers in the first window region, the difference in wavelength shift between the wavelength of the well layers in the second window region and the wavelength of the well layers in the emission region being from a value equal to or larger than 10 nm to a value equal to or smaller than 30 nm.

2. A semiconductor laser according to claim 1 further comprising a high-reflectance film formed on the second edge having reflectance equal to or higher than 60% to the light from the active layer.

3. A semiconductor laser according to claim 1

wherein the difference in wavelength shift between the bandgap of the well layers in the emission region and the bandgap of the well layers in the first window region is from a value equal to or larger than 40 nm to a value equal to or smaller than 80 nm.

4. A semiconductor laser according to claim 1 wherein the second window region has a length from a value equal to or longer than 20 μm to a value equal to or shorter than 30 μm in the active layer along the direction from the second edge toward the first edge.

5. A semiconductor laser according to claim 1 further comprising a current blocking layer for preventing current injection into the second window region.

6. A semiconductor laser according to claim 1 wherein the well layers has a thickness of 5 nm or less, and the barrier layers of the active layer has a thickness of 5 nm or less.

7. A semiconductor laser comprising:
a clad layer of a first conduction type;
an active layer formed on the clad layer of the first conduction type to emit light from an emission region thereof toward opposed first and second edges upon injection of a current;

a clad layer of a second conduction type formed on the active layer;

a first window region formed near the first edge, in which the bandgap of the well layers is wider than the bandgap of the well layers in the emission region;

a second window region formed near the second edge, in which the bandgap of the well layers is wider than the bandgap of the well layers in the emission region

and narrower than the bandgap of the well layers in the first window region; and

a reflection film formed on the second edge to reflect the light from the active layer.

8. A semiconductor laser according to claim 7 wherein the active layer is made of an InGaAlP compound semiconductor.

9. A semiconductor laser according to claim 8 wherein the active layer has a multiple well structure alternately stacking well layers of an InGaAlP compound semiconductor and barrier layers of an InGaAlP compound semiconductor.

10. A semiconductor laser according to claim 8 wherein the difference in wavelength shift between the wavelength of the well layers in the second window region and the wavelength of the well layers in the emission region is from a value equal to or larger than 10 nm to a value equal to or smaller than 30 nm.

11. A semiconductor laser according to claim 8 further comprising a high-reflectance film formed on the second edge having reflectance equal to or higher than 60% to the light from the active layer.

12. A semiconductor laser according to claim 8 wherein the difference in wavelength shift between the bandgap of the well layers in the emission region and the bandgap of the well layers in the first window region is from a value equal to or larger than 40 nm to a value equal to or smaller than 80 nm.

13. A semiconductor laser according to claim 8 wherein the second window region has a length from a

value equal to or longer than 20 μm to a value equal to or shorter than 30 μm in the active layer along the direction from the second edge toward the first edge.

14. A semiconductor laser according to claim 8 further comprising a current blocking layer for preventing current injection into the second window region.

15. A semiconductor laser according to claim 9 wherein the well layers has a thickness of 5 nm or less, and the barrier layers of the active layer has a thickness of 5 nm or less.